

# JESUS MANCILLA

## Applied Scientist & Quantitative UX Researcher

LLMs, Evaluation, RAG, Survey Analytics, AI Systems Architecture

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### PROFESSIONAL SUMMARY

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Innovative professional at the intersection of **Quantitative UX Research** and **Applied Machine Learning/LLMs**. Proven track record designing hybrid ML classifiers, survey analysis systems, and enterprise AI architectures (vector databases, retrieval pipelines, RAG, autonomous agents). Blend of academic research (peer-reviewed publications, HCI/AI focus) and industry impact (Meta, Roku, Walmart, Argomai). Skilled at translating business goals into scalable AI/UX systems with measurable outcomes.

### TECHNICAL STACK & DOMAINS

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**LLMs/ML:** Transformers, RAG, Evaluation, Prompting, Feature Eng., Scikit-learn, PyTorch, TensorFlow

**NLP:** Text classification, semantic retrieval, vector databases, embeddings, clustering

**Data/Apps:** Python, SQL, FastAPI, LangChain/LangGraph, React/Next.js, JS/TS

**Systems:** Enterprise architecture, service boundaries, domain models, NFRs, workflow optimization

**Quant UXR:** Survey analytics at scale, behavioral log analysis, KPI dev, dashboards, experimentation

**Cloud/Tooling:** CI/CD, observability, automation pipelines; Git, Docker

**Other:** Data viz, statistical inference; Fluent in English & Spanish

### WORK EXPERIENCE

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#### Argomai

Houston, TX (Remote)

Staff Applied Scientist (Consultant)

Jan 2025 – Present

- Led enterprise **GenAI/ML architecture**, defining domain models, service boundaries, and data governance to support scalable customer-facing products.
- Built **retrieval pipelines**, **vector databases**, and a reusable **AI component library** (embeddings, prompt templates, orchestration SDK, LangGraph agents).
- **Cut document classification time from ~90 min → <5 min** via workflow automation; reduced PM reporting from **6 h/wk → <1 h**.
- *User impact:* faster document turnaround, improved knowledge discoverability, and accelerated decision cycles.

#### Meta

Houston, TX (Remote)

Senior Quantitative UX Researcher

Jan 2024 – Jan 2025

- Built a **hybrid ML classifier** for open-ended responses (clustering, few-shot, human-in-the-loop, multi-agent reasoning) to triage/analyze surveys.
- **Reduced analysis time from ~30 hrs to <8 hrs**; doubled survey output by productizing Python analytics tools for researchers across projects.
- Merged behavioral editor logs with in-app surveys to produce comprehensive, action-oriented insights.
- *User impact:* accelerated feedback loops for creators/researchers; insights influenced roadmap decisions and feature prioritization.

#### Roku

San Jose, CA

Senior User Experience Researcher

Jan 2021 – Nov 2023

- Developed the **Modular Survey Analysis System**: end-to-end ML report generator for survey data (stats + NLP categorization of open-ended responses).
- Led quant/qual research on physical devices; **behavioral log analysis across 70M+ devices** to drive product decisions.
- Created an **AI-powered indexed database** of UX & CI research; **cut weekly report generation from ~4 hrs to <5 min** via ML automation and GenAI summaries.
- *User impact:* org-wide self-serve insights; faster executive reporting; improved searchability of prior research.

#### Walmart Global Tech

Sunnyvale, CA

Senior User Experience Researcher

Aug 2019 – Nov 2020

- Established KPIs and led analytics for Sam's Club mobile app; integrated user interaction data with business metrics to inform UX strategy.
- *User impact:* decisions tied to measurable experience improvements; clearer alignment between usage patterns and product bets.

#### Scrapworks Inc.

Palo Alto, CA

Data Scientist

Sep 2017 – Aug 2019

- **60% reduction** in forecasting error using deep learning for commodities futures; built dashboards over 20 years of sales data (**+30% sales growth**).
- Initiated NLP merchandise classification (supported a patent filing); productionized data ingestion/cleaning across multiple sources.

ADDITIONAL EXPERIENCE

<b>Suggestic</b>	Mexico City, Mexico
User Experience Researcher	Dec 2016 - Sep 2017
<ul style="list-style-type: none"><li>– Executed data-driven testing and analysis for new app features, ensuring optimal integration and alignment with user needs and business objectives.</li><li>– Designed and developed advanced app prototypes, leveraging analytics to inform rapid iterations and feature enhancements.</li></ul>	
<b>Stanford University</b>	Stanford, CA
User Experience Researcher	May 2016 - Nov 2016
<ul style="list-style-type: none"><li>– Conducted pioneering research on stress detection using machine learning algorithms, collecting and analyzing over 150 hours of car, biometric, and video data.</li><li>– Contributed to the development of algorithms with 90% accuracy in stress detection.</li><li>– Authored and contributed to research papers on automotive UI and pedestrian interactions, enhancing the academic discourse in UX design.</li></ul>	
<b>ITAM</b>	Mexico City, Mexico
User Experience Researcher	Aug 2014 - May 2016
<ul style="list-style-type: none"><li>– Created custom data visualizations and analyzed psychophysiological signals, identifying user behavior patterns using machine learning techniques.</li><li>– Crafted personalized user experience solutions for interactive technologies, spanning wearable, mobile, and web platforms.</li></ul>	

SELECTED PROJECTS (UXR ∩ APPLIED ML)

<b>Research Librarian (AI Index for UX/CI)</b>	— Semantic retrieval over an indexed research corpus using embeddings, vector stores, and custom ranking; improved findability and reuse of insights across the org.
<b>Modular Survey Analysis System</b>	— End-to-end pipeline that auto-generates survey reports (stats + NLP open-ended categorization + clustering); enabled at-scale survey analytics with minimal analyst time.
<b>Customer Support Bot (Ref Architecture)</b>	— LLM-augmented support with RAG, evaluation/observability, and safety rails; blueprint for productionizing conversational flows.

EDUCATION

<b>Instituto Tecnológico Autónomo de México (ITAM)</b>	
M.S. in Computer Science (HCI/AI Focus)	2014 – 2016
<b>Universidad de Colima</b>	
B.A. in Psychology	2009 – 2013

SELECTED PUBLICATIONS

Ramos-Rivera, R. E., Santana Mancilla, P. C., Garcia-Mancilla, J., & Gaytán-Lugo, L. S. (2025). Language models in education: Generative AI to optimize teacher performance analysis. <i>InnovAcademica</i> , 1(2), 74–85.	
Ramos-Rivera, R. E., Garcia-Mancilla, J., Cárdenas-Villa, G. E., & Santana-Mancilla, P. C. (2024). Towards Improving Teacher Performance Assessment through Human-Centered AI-Powered Survey Analysis: An Approach Using Large Language Models (LLM). <i>Avances en Interacción Humano-Computadora</i> , 9(1), 261-264.	
Baltodano, Sonia, Jesus Garcia-Mancilla, and Wendy Ju. "Eliciting Driver Stress Using Naturalistic Driving Scenarios on Real Roads." In <i>Proceedings of the 10th International Conference on Automotive User Interfaces and Interactive Vehicular Applications</i> , pp. 298-309. ACM, 2018.	
Currano, Rebecca, So Yeon Park, Lawrence Domingo, Jesus Garcia-Mancilla, Pedro C. Santana-Mancilla, Victor M. Gonzalez, and Wendy Ju. "¡Vamos!: Observations of Pedestrian Interactions with Driverless Cars in Mexico." In <i>Proceedings of the 10th International Conference on Automotive User Interfaces and Interactive Vehicular Applications</i> , pp. 210-220. ACM, 2018.	
J. Garcia-Mancilla, J. E. Ramirez-Marquez, C. Lipizzi, G. T. Vesonder, and V. M. Gonzalez, "Characterizing negative sentiments in at-risk populations via crowd computing: a computational social science approach," <i>International Journal of Data Science and Analytics</i> , Jun. 2018.	
For full list, see: <a href="http://jgmancilla.com/research-papers">jgmancilla.com/research-papers</a>	